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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/896,224	06/28/2001	Bruce E. Reynolds	T-5954	9427

7590

11/20/2003

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
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1764

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/896,224

Applicant(s)

REYNOLDS, BRUCE E.

Examiner

Walter D. Griffin

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1 is/are allowed.
- 6) ☒ Claim(s) 4-6 and 9-11 is/are rejected.
- 7) ☒ Claim(s) 3, 7, 8, 12-14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

The claim rejections under 35 U.S.C. 112, second paragraph, and 35 U.S.C. 103 as described in the office action mailed on March 6, 2003 have been withdrawn in view of the amendment filed on September 8, 2003.

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 2-13 have been renumbered as 3-14. Throughout this office action, any reference to claim numbers is to the renumbered claims.

Claims 3, 7, 8, and 12-14 are objected to because of the following informalities: In claims 3, 7, and 12, the multiple references to claim 1 are unnecessary. In claim 8, the additional steps are not clear since step (a) of claim 8 appears to be the same as claim 1(c)(1). In claim 13, the multiple references to claim 8 are unnecessary. In claim 14, the multiple references to claim 14 are unnecessary. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4-6 and 9-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 5, 6, 9, 10, and 11 are indefinite because it is unclear on which claims these claims depend. Each of these claims refers to more than one prior claim. However, it is unclear if applicant intends for these claims to be multiple dependent claims. Therefore, the scope of these claims is unascertainable. If they are intended to be multiply dependent claims, then these claims are improper multiple dependent claims in that each does not depend on the claims in the alternative only.

To overcome the objections and rejections, the examiner recommends that claims 3-14 be re-written as follows:

Claim 3. The process according to Claim 1 wherein the second hydrocracking reaction zone comprises a multiplicity of layered catalyst beds, including at least one hydrotreating catalyst layer which is maintained at reaction conditions preselected for high hydrotreating activity.

Claim 4. The process according to Claim 3 wherein the second hydrocracking reaction zone further comprises at least one hydrocracking catalyst layer which is maintained at hydrocracking reaction conditions, such that the entire effluent from the catalyst layer maintained at hydrocracking reaction conditions passes to the catalyst layer maintained at hydrotreating reaction conditions.

Claim 5. The process according to Claim 4, which further comprises fractionating at least a portion of the effluent from the second hydrocracking reaction zone and isolating at least one fuel product and a recycle stream which is recycled to the second hydrocracking reaction zone.

Claim 6. The process according to Claim 3 further comprising passing the light gas oil fraction to the hydrotreating catalyst layer.

Claim 7. The process according to Claim 1, wherein (c) further comprises isolating at least a diesel having a low sulfur content, a kerosene having a low sulfur content, and a naphtha having a low sulfur content.

Claim 8. The process according to Claim 1 wherein (c) further comprises passing the first hydrocracking zone effluent to a hot hydrogen stripper and isolating a first hydrogen-rich gaseous stream and effluent having a low-sulfur effluent and passing the first hydrogen-rich gaseous stream to the crude desulfurization unit for hydrodesulfurizing the crude oil feed.

Claim 9. The process according to Claim 3 further comprising passing the first hydrocracking zone effluent to a hot hydrogen stripper and isolating a hydrogen-rich gaseous stream and effluent having a low sulfur content and passing the first hydrogen-rich gaseous stream to the crude desulfurization unit for hydrodesulfurizing the crude oil feed.

Claim 10. The process according to Claim 9, which further comprises a) passing the low-sulfur effluent in combination with hydrogen to the second hydrocracking zone to produce a hydrocracked liquid product and b) fractionating the hydrocracked liquid product to form at least one fuel product having a low sulfur content.

Claim 11. (Currently Amended) The process of Claim 10 further comprising passing the low sulfur effluent to the hydrotreating catalyst layer.

Claim 12. (Currently Amended) The process according to Claim 1 wherein step (b) further comprises separating the desulfurized crude oil in an atmospheric distillation column and isolating at least a light gas oil and an atmospheric residuum therefrom, separating the atmospheric residuum in a vacuum distillation column and isolating at least a vacuum residuum stream and a vacuum gas oil stream.

Claim 13. (Currently Amended) The process according to Claim 8 wherein the first hydrocracking zone effluent is passed to a second hydrocracking reaction zone without substantially cooling the first hydrocracking zone effluent.

Claim 14. (Currently Amended) A crude oil desulfurization process comprising: (a) hydrodesulfurizing a crude oil feed in a crude desulfurization unit to obtain a desulfurized crude oil, (b) separating the desulfurized crude oil and isolating a light gas oil fraction, a vacuum gas oil fraction and a residual fraction, (c) passing the vacuum gas oil in combination with hydrogen to a first hydrocracking reaction zone, where it is hydrocracked to produce a first hydrocracking zone effluent; (d) passing at least a portion of the first hydrocracking zone effluent to a second hydrocracking reaction zone comprising a multiplicity of catalyst beds, including at least one hydrotreating catalyst layer which contains catalyst preselected for high hydrotreating activity,

(e) passing the light gas oil fraction to the hydrotreating catalyst layer of step (d) for hydrotreating the light gas oil fraction, and (f) recycling at least a portion of the combined effluent of steps (d) and (e), to the second hydrocracking reaction zone.

Allowable Subject Matter

Claim 1 is allowed.

Claims 4-6 and 9-11 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The primary reason for indicating allowable subject matter is that the prior art of record does not disclose a process as claimed in which two hydrocracking steps are utilized with recycle to the second hydrocracking step.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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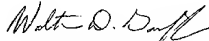
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.


Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
November 17, 2003